

1. A cementitious composition adapted to form a cellular concrete material capable of autogenous heating to self-cure, said composition comprising about 20-70 wt% fly ash, about 10 - about 50 wt% Portland cement, about .001 - 2.00 wt% reinforcing fiber and about .0001-2.00 wt% foam activating agent, the
5 foregoing percentages adding up to 100 wt% of the non-aqueous components of said composition, water added to said non-aqueous components and in an amount of about 20-60 wt% based on 100 wt% of said non-aqueous components.

2. Composition as recited in claim 1 wherein said fly ash is present in an amount of about 45-70 %, said Portland cement is present in an amount of about 25-50 %, said fibers are percent in an amount of about .005-.020 %, and said activating agent is present in an amount of .001-.020.

3. Composition as recited in claim 2 wherein said activating agent comprises finely divided Al powder.

4. Autogenously curable aerated concrete composition comprising:

Portland Cement Type I & II (Moderate alkali)	30%-60%
Fly Ash (Type F ASTM 618)	30%-80%
Water to Cement Ratio	40%-50%
5 Thermal Shrinkage Control Agent	0.2%-1.5%
Accelerator	0.2%-2.0%
Aluminum Paste	0.1%-0.22%
Surfactant	0.02%-0.05%
Fibers	0.05%-2.00%
10 Lime	2%-4%
Plaster of Paris	2%-4%
Brucite	0.1%-0.5%
Magnesium Oxide	0.1%-0.5%
Sodium Silicate	0.25%-2.0%
15 Calcium Aluminate	0.1%-1.25%

All of the above percentages are based on the dry weight of the cement and fly ash and add up to 100 wt%.

5. Method for making a cured cellular concrete material having non-aqueous and aqueous components comprising mixing said non-aqueous components and said water as set forth in claim 1 together, and curing said material by autogenous heating for a time sufficient to form a solid mass.

6. Method as recited in claim 5 comprising cutting said mass into desired shapes.

7. Method as recited in claim 5 wherein said autogenous heating generates a temperature in said material of about 150-180° F.

8. Method as recited in claim 6 wherein said cutting comprises cutting with a band saw or abrasive wire.

9. Method as recited in claim 6 wherein said cutting comprises cutting with a circular saw.

10. Method as recited in claim 5 wherein said curing comprises placing said material in a mold.

11. Method for making a cured cellular concrete having non-aqueous and aqueous components comprising mixing said non-aqueous components and water as set forth in claim 1 together, allowing said material to cure and then cutting said material into a desired shape adapted to form a structural unit.

12. Method as recited in claim 11 wherein said desired shape comprises a panel.

13. Method as recited in claim 12 wherein said desired shape comprises a block.

14. Method as recited in claim 11 wherein said curing comprises allowing said material to cure at ambient temperature and pressure.

15. Composition comprising fly ash, hydraulic cement and a foam activating agent, said foam activating agent comprising an Al paste.

16. Method of forming an aerated concrete material comprising mixing fly ash and hydraulic cement in slurry form, adding a foam activating agent to said slurry and allowing said slurry to autogenously cure at ambient pressure, said cured concrete material having a compressive strength of greater than 350 psi and flexural
5 strength of from about 60-200 psi.

17. Method as recited in claim 16 further comprising cutting said cured concrete material into a desired structural building unit shape by a saw means.